REMARKS

Status of the Claims

The Examiner had rejected all pending claims 15-39. By previous amendment, claims 1 to 14 are canceled. Upon entry of this amendment, claims 15 to 39 will remain pending in this application with claims 15 and 28 being independent.

Election/Restriction Requirement and Designation of Claims

Applicants thank the Examiner for his agreement with the arguments made in the last amendment, and for consideration of claims 15-39 herein.

Double Patenting

Applicants thank the Examiner for his agreement that pending claims 15-39 are not patentably indistinct from claims 1-15 of the prior patent, and his vacating of the prior double patenting rejection.

Claim Rejections Under 35 U.S.C. §102

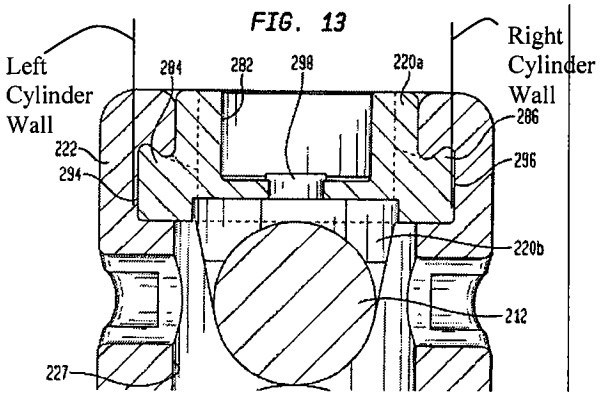
The Examiner has rejected claims 15-19, 21-26, 28-31 and 33-38 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,565,565 (Yuan et al.).

In particular, the Examiner asserts with respect to independent claims 15 and 28:

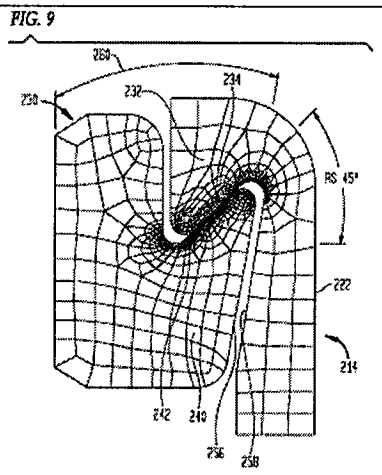
> With respect to claims 15, 28, Yuan et al disclose an anchor assembly fro securing a fixation element comprising an anchor (222) having an open slot (227), side walls on opposed sides of the open slot, a proximal portion, distal portion, and an anchor flange segment extending from each of the side walls in a direction toward the central longitudinal axis, (FIG.13) ,.the anchor flange segments each including an inferior contact surface (FIGS.13-16) extending in a direction toward the central longitudinal axis 'and toward the distal portion to define a radial slant; and a closure element (220) for closing the open slot and-applying pressure to the fixation element to capture the fixation element within the open slot, the closure element including a closure body and a plurality of closure flange. segments (284,286) extending from the closure" body

in a direction that is transverse to the anchor element central longitudinal axis when the closure element is placed in the open slot each closure flange including a superior contact surface extending in a direction away from the central longitudinal axis when the closure element is placed in the open slot so that the closure flange segment superior surface engage the anchor element flange segment inferior surfaces over a contact area when the closure elements is placed in a closed position in the anchor element open slot; as set forth in column 9, lines 9-67, column 10, lines 1-55; wherein the closure flange segments further include exterior surfaces that extend away from the longitudinal axis and proximally when the closure element is placed in the open slot to provide a ***partial cone shaped outer surface to the closure flanges***; as best seen in FIGS.12-16; ***wherein the radial slant is configured to cause sliding of the anchor flange segment inferior surfaces with respect to the closure flange segment superior surfaces upon pressure being applied on the fixation elements***; as set forth in column 10, lines 1-67, column 11 lines 1-67

Independent claim 15 recites a closure element for closing the open slot in the anchor element, where the closure element has closure flange segments, and ***a partial cone shaped outer surface is provided on the closure flanges***. The difference between this structural recitation and the Yuan reference can be seen most clearly by comparing figures that show the differences:



Partial Reproduction of Fig. 13 of Yuan showing Engagement Flanges 284, 286 and Marked to Show Left and Right Cylinder Walls for Outer Surface of Flanges



Partial Reproduction of Fig. 9 of the Present Application Showing Closure Flange 240 Having an Outer Surface 256 Angled by an Amount 260 to Form a Partial Cone

The outer surfaces of the closure flanges in ***Yuan*** form a ***partial cylinder*** – the outer

surfaces 256 of the closure flanges 240 ***as claimed*** form ***a partial cone*** at an angle 260. This partial cone is further described and its benefits explained at page 15, lines 17 to 27 of the application:

> In the right hand embodiment (and as best seen in FIG. 9), an outer surface 256 of closure flange 240 is angled outward (away from central longitudinal axis 228 and toward the proximal portion of anchor element 214) at an angle 260 of approximately 10 degrees. Where outer surface 256 is also curved in a plane transverse to central longitudinal axis 228 (see FIGS. 8C and 8D), outer surface 256 is in the shape of a partial cone as best illustrated in FIG. 8C. Side wall 224 includes a correspondingly angled inner surface 258, allowing cone shaped flange 240 to penetrate into anchor 214 upon closing of closure element 230. In addition, the angled nature of surfaces 256 and 258 allow more mass to be included in closure flange 240, making it stronger and more dimensionally stable, while the removal of mass or thinning of sidewall 222 allows for more resilience, and thus more displacement when such displacement is desired close to flange 232 inward while maintaining strength in lower parts of the sidewall.

As Yuan makes no teaching or disclosure of the claim structure or its advantages, claim 15, as well as the claims that depend from claim 15, are patentable over Yuan.

Independent claim 28 recites that:

> the ***radial slant is configured to cause sliding*** of the anchor flange segment inferior surfaces with respect to the closure flange segment superior surfaces ***upon pressure being applied on the fixation element.***

This structure and its effect are described in the application, for example, at page 15, line 28:

> The increase in angle from 15 to 45 degrees from the left hand embodiment to the right hand embodiment has a number of implications for an anchor assembly of the invention. One implication is that, since the contact area where flange surfaces 234, 242 meet is increased (and it is also increased as a result of cone angle 260), the stresses at the surfaces are reduced. A further implication is that forces tending to draw sidewall inward will be increased due to the fact that the pressure in the contact area has been "aimed" inward, that is, cos(RS) is larger. In addition, the configuration on the right hand embodiment with RS = 45 degrees is such that, when the flanges are loaded (by

> applying pressure to the spinal fixation element through closure element 230) and sidewall 222 is drawn inward, friction between surfaces 234 and 242 is overcome, allowing the flanges to slide with respect to each other and resulting in sidewall 222 and anchor flange 232 being displaced inward as illustrated in FIG. 10. As shown in FIG. 10, where friction forces are overcome and flanges 232, 240 can slide with respect to each other, anchor flange 232 and at least a portion of sidewall 222 is displaced inward, securing closure element 230 within anchor element 214 and causing locking elements 252, 254 (FIGS. 8A-8D) to more securely lock, resulting in a more permanent and secure fixation of the spinal fixation element to the anchor.

In Yuan, the flanges have a radial slant and a "cam." A surgeon rotates the locking cap 220 to its closed position. There is no disclosure, teaching or suggestion, however, of sliding that is caused by pressure being applied to the fixation element as a result of the configuration of the radial slant. The only sliding that occurs in Yuan is that sliding that is caused by the surgeon while rotating the locking cap 220 to its closed position. In the invention presently claimed, it is pressure applied on the fixation element that causes sliding. Because of the configuration of the radial slant – i.e., that it is angled so that friction forces on the surfaces of the flange elements are overcome and the sidewalls of the anchor element move inward during tightening – the elements of the presently claimed invention move in response to pressure on the fixation element. This is not disclosed, taught or suggested in Yuan.

In addition to Yuan not disclosing, teaching or suggesting this recitation, elements of the Yuan disclosure actually suggest the opposite of this claim recitation. For example, Yuan, like the Mellinger reference that was distinguished in the previous response to office action, teaches that:

> The head portion preferably includes structure for interacting with the locking cap to prevent the opposed side walls of the head portion from expanding radially outwardly when the arcuate flanges are engaged in the arcuate slots. [Column 2, lines 32 to 36.]

Yuan thus teaches the preferential holding of the sidewalls against movement – while the present claims require the radial slant on the flanges to be configured to cause sliding.

Further, and in this same vein, the illustrations of the Yuan devices appear not to permit the recited sliding. Cross sectional views such as Figures 4, 10, 13 and 16 all show the flanges

and slots of the Yuan devices as having vertical walls (see, for example, the edited version of Figure 13 above showing the partially cylindrical walls) that are closely dimensioned and that appear to leave no room for any kind of sliding motion. Rather, it appears that the flanges and slots interact to hold still.

For at least these reasons, claim 28, is patentable over Yuan.

REQUEST FOR TELEPHONIC INTERVIEW

Applicants believe that further prosecution of the pending application will best be served by a telephonic interview between the Examiner and Applicants' representative. Undersigned counsel for the Applicants will telephone the Examiner to arrange an appropriate time for the interview.

Dated: April 7, 2006

Respectfully submitted,

By _____
Ronald E. Cahill
Registration No.: 38,403
NUTTER MCCLENNEN & FISH LLP
World Trade Center West
155 Seaport Boulevard
Boston, Massachusetts 02210-2604
(617) 439-2000
(617) 310-9000 (Fax)
Attorney for Applicant

1505278.1